BioMap and Living Waters

Guiding Land Conservation for Biodiversity in Massachusetts

Core Habitats of Williamsburg

This report and associated map provide information about important sites for biodiversity conservation in your area.

This information is intended for conservation planning, and is not intended for use in state regulations.

Produced by:

Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries and Wildlife
Executive Office of Environmental Affairs
Commonwealth of Massachusetts

Produced in 2004

BioMap and Living Waters:
Guiding Land Conservation for Biodiversity in Massachusetts

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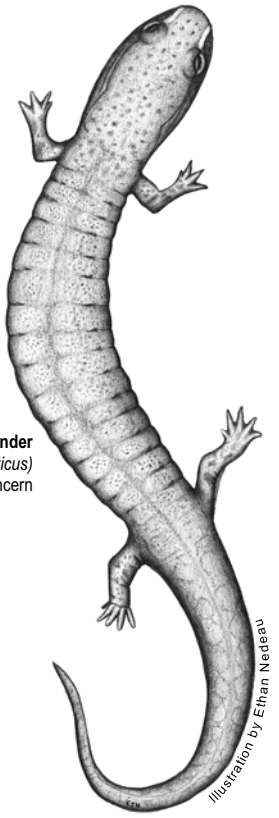
* Depending on the location of Core Habitats, your city or town may not have all of these sections.



Spring Salamander
(Gyrinophilus porphyriticus)
Species of Special Concern

Funding for this project was made available by the Executive Office of Environmental Affairs, contributions to the Natural Heritage & Endangered Species Fund, and through the State Wildlife Grants Program of the US Fish & Wildlife Service.

Natural Heritage & Endangered Species Program

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For more information on rare species and natural communities, please see our fact sheets online at ***www.nhesp.org***

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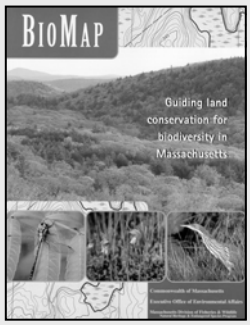
Introduction

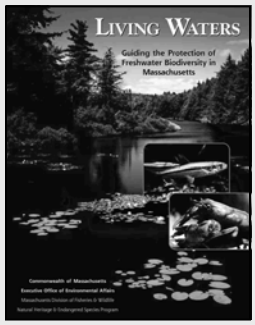
In this report, the Natural Heritage & Endangered Species Program provides you with site-specific biodiversity information for your area. Protecting our biodiversity today will help ensure the full variety of species and natural communities that comprise our native flora and fauna will persist for generatons to come.

The information in this report is the result of two statewide biodiversity conservation planning projects, ***BioMap*** and ***Living Waters***. The goal of the BioMap project, completed in 2001, was to identify and delineate the most important areas for the long-term viability of terrestrial, wetland, and estuarine elements of biodiversity in Massachusetts. The goal of the Living Waters project, completed in 2003, was to identify and delineate the rivers, streams, lakes, and ponds that are important for freshwater biodiversity in the Commonwealth. These two conservation plans are based on documented observations of rare species, natural communities, and exemplary habitats.

What is a Core Habitat?

Both BioMap and Living Waters delineate ***Core Habitats*** that identify the most critical sites for biodiversity conservation across the state. Core Habitats represent habitat for the state's most viable rare plant and animal populations and include exemplary natural communities and aquatic habitats. Core Habitats represent a wide diversity of rare species and natural communities (see Table 1), and these areas are also thought to contain virtually all of the other described species in Massachusetts. Statewide, BioMap Core Habitats encompass 1,380,000 acres of uplands and wetlands, and Living Waters identifies 429 Core Habitats in rivers, streams, lakes, and ponds.





Get your copy of the ***BioMap*** and ***Living Waters*** reports! Contact Natural Heritage at 508-792-7270, Ext. 200 or email natural.heritage@state.ma.us. Posters and detailed technical reports are also available.

Core Habitats and Land Conservation

One of the most effective ways to protect biodiversity for future generations is to protect Core Habitats from adverse human impacts through land conservation. For Living Waters Core Habitats, protection efforts should focus on the ***riparian areas***, the areas of land adjacent to water bodies. A naturally vegetated buffer that extends 330 feet (100 meters) from the water's edge helps to maintain cooler water temperature and to maintain the nutrients, energy, and natural flow of water needed by freshwater species.

In Support of Core Habitats

To further ensure the protection of Core Habitats and Massachusetts' biodiversity in the long-term, the BioMap and Living Waters projects identify two additional areas that help support Core Habitats.

In BioMap, areas shown as ***Supporting Natural Landscape*** provide buffers around the Core Habitats, connectivity between Core Habitats, sufficient space for ecosystems to function, and contiguous undeveloped habitat for common species. Supporting Natural Landscape was

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generated using a Geographic Information Systems (GIS) model, and its exact boundaries are less important than the general areas that it identifies. Supporting Natural Landscape represents potential land protection priorities once Core Habitat protection has been addressed.

In Living Waters, ***Critical Supporting Watersheds*** highlight the immediate portion of the watershed that sustains, or possibly degrades, each freshwater Core Habitat. These areas were also identified using a GIS model. Critical Supporting Watersheds represent developed and undeveloped lands, and can be quite large. Critical Supporting Watersheds can be helpful in land-use planning, and while they are not shown on these maps, they can be viewed in the Living Waters report or downloaded from www.mass.gov/mgis.

Understanding Core Habitat Species, Community, and Habitat Lists

What's in the List?

Included in this report is a list of the species, natural communities, and/or aquatic habitats for each Core Habitat in your city or town. The lists are organized by Core Habitat number.

For the larger Core Habitats that span more than one town, the species and community lists refer to the entire Core Habitat, not just the portion that falls within your city or town. For a list of all the state-listed rare species within your city or town's boundary, whether or not they are in Core Habitat, please see the town rare species lists available at www.nhesp.org.

The list of species and communities within a Core Habitat contains only the species and natural communities that were explicitly included in a given BioMap or Living Waters Core Habitat. Other rare species or examples of other natural communities may fall within the Core Habitat, but for various reasons are not included in the list. For instance, there are a few rare species that are omitted from the list or summary because of their particular sensitivity to the threat of collection. Likewise, the content of many very small Core Habitats are not described in this report or list, often because they contain a single location of a rare plant

Table 1. The number of rare species and types of natural communities explicitly included in the BioMap and Living Waters conservation plans, relative to the total number of native species statewide.

BioMap

	Species and Verified Natural Community Types	
Biodiversity Group	**Included in BioMap**	**Total Statewide**
Vascular Plants	246	1,538
Birds	21	221 breeding species
Reptiles	11	25
Amphibians	6	21
Mammals	4	85
Moths and Butterflies	52	An estimated 2,500 to 3,000
Damselflies and Dragonflies	25	An estimated 165
Beetles	10	An estimated 2,500 to 4,000
Natural Communities	92	> 105 community types

Living Waters

	Species	
Biodiversity Group	**Included in Living Waters**	**Total Statewide**
Aquatic Vascular Plants	23	114
Fishes	11	57
Mussels	7	12
Aquatic Invertebrates	23	An estimated > 2500

species. Some Core Habitats were created for suites of common species, such as forest birds, which are particularly threatened by habitat fragmentation. In these cases, the individual common species are not listed.

What does 'Status' mean?

The Division of Fisheries and Wildlife determines a status category for each rare species listed under the Massachusetts Endangered Species Act, M.G.L. c.131A, and its implementing regulations, 321 CMR 10.00. Rare species are categorized as Endangered, Threatened, or of Special Concern according to the following:

- ***Endangered*** species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts.
- ***Threatened*** species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range.
- ***Special Concern*** species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

In addition, the Natural Heritage & Endangered Species Program maintains an unofficial ***watch list*** of plants that are tracked due to potential conservation interest or concern, but are not regulated under the Massachusetts Endangered Species Act or other laws or regulations. Likewise, described natural communities are not regulated any laws or regulations, but they can help to identify ecologically important areas that are worthy of protection. The status of natural communities reflects the documented number and acreages of each community type in the state:

- ***Critically Imperiled*** communities typically have 5 or fewer documented sites or have very few remaining acres in the state.
- ***Imperiled*** communities typically have 6-20 sites or few remaining acres in the state.
- ***Vulnerable*** communities typically have 21-100 sites or limited acreage across the state.
- ***Secure*** communities typically have over 100 sites or abundant acreage across the state; however excellent examples are identified as Core Habitat to ensure continued protection.

Legal Protection of Biodiversity

BioMap and Living Waters present a powerful vision of what Massachusetts would look like with full protection of the land that supports most of our biodiversity. To create this vision, some populations of state-listed rare species were deemed more likely to survive over the long-term than others.

Regardless of their potential viability, all sites of state-listed species have full legal protection under the Massachusetts Endangered Species Act (M.G.L. c.131A) and its implementing regulations (321 CMR 10.00). Habitat of state-listed wildlife is also protected under the Wetlands Protection Act Regulations (310 CMR 10.37 and 10.59). The ***Massachusetts Natural Heritage Atlas*** shows **Priority Habitats**, which are used for regulation under the Massachusetts Endangered Species Act and Massachusetts Environmental Policy Act (M.G.L. c.30) and **Estimated Habitats**, which are used for regulation of rare wildlife habitat under the Wetlands Protection Act. For more information on rare species regulations, see the *Massachusetts Natural Heritage Atlas*, available from the Natural Heritage & Endangered Species Program in book and CD formats.

BioMap and Living Waters are conservation planning tools and do not, in any way, supplant the Estimated and Priority Habitat Maps which have regulatory significance. Unless and until the combined BioMap and Living Waters vision is fully realized, we must continue to protect all populations of our state-listed species and their habitats through environmental regulation.

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Understanding Core Habitat Summaries

Following the BioMap and Living Waters Core Habitat species and community lists, there is a descriptive summary of each Core Habitat that occurs in your city or town. This summary highlights some of the outstanding characteristics of each Core Habitat, and will help you learn more about your city or town's biodiversity. You can find out more information about many of these species and natural communities by looking at specific ***fact sheets*** at www.nhesp.org.

Next Steps

BioMap and Living Waters were created in part to help cities and towns prioritize their land protection efforts. While there are many reasons to conserve land – drinking water protection, recreation, agriculture, aesthetics, and others – BioMap and Living Waters Core Habitats are especially helpful to municipalities seeking to protect the rare species, natural communities, and overall biodiversity within their boundaries. Please use this report and map along with the rare species and community fact sheets to appreciate and understand the biological treasures in your city or town.

Protecting Larger Core Habitats

Core Habitats vary considerably in size. For example, the average BioMap Core Habitat is 800 acres, but Core Habitats can range from less than 10 acres to greater than 100,000 acres. These larger areas reflect the amount of land needed by some animal species for breeding, feeding, nesting, overwintering, and long-term survival. Protecting areas of this size can be very challenging, and requires developing partnerships with neighboring towns.

Prioritizing the protection of certain areas within larger Core Habitats can be accomplished through further consultation with Natural Heritage Program biologists, and through additional field research to identify the most important areas of the Core Habitat.

Additional Information

If you have any questions about this report, or if you need help protecting land for biodiversity in your community, the Natural Heritage & Endangered Species Program staff looks forward to working with you.

Contact the Natural Heritage & Endangered Species Program:

by Phone *508-792-7270, Ext. 200*

by Fax: *508-792-7821*

by Email: *natural.heritage@state.ma.us*.

by Mail: *North Drive*
Westborough, MA 01581

The GIS datalayers of BioMap and Living Waters Core Habitats are available for download from MassGIS: www.mass.gov/mgis

Check out www.nhesp.org for information on:

- Rare species in your town
- Rare species fact sheets
- BioMap and Living Waters projects
- Natural Heritage publications, including:
  - Field guides
  - Natural Heritage Atlas, and more!

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BioMap: Species and Natural Communities

Williamsburg

Core Habitat BM651

Vertebrates

Common Name	Scientific Name	Status
Jefferson Salamander	*Ambystoma jeffersonianum*	Special Concern
Spring Salamander	*Gyrinophilus porphyriticus*	Special Concern

Core Habitat BM692

Natural Communities

Common Name	Scientific Name	Status
Circumneutral Rock Cliff Community		Vulnerable
Circumneutral Rocky Summit/Rock Outcrop Community		Imperiled
Circumneutral Talus Forest/Woodland		Vulnerable

Core Habitat BM695

Natural Communities

Common Name	Scientific Name	Status
Circumneutral Rock Cliff Community		Vulnerable
Circumneutral Talus Forest/Woodland		Vulnerable
Forest Seep Community		Secure

Invertebrates

Common Name	Scientific Name	Status
Elderberry Long-Horned Beetle	*Desmocerus palliatus*	Special Concern

Core Habitat BM696

Natural Communities

Common Name	Scientific Name	Status
Circumneutral Rocky Summit/Rock Outcrop Community		Imperiled

BioMap: Species and Natural Communities

Williamsburg

Core Habitat BM737

Invertebrates

Common Name	Scientific Name	Status
Elderberry Long-Horned Beetle	*Desmocerus palliatus*	Special Concern
Spatterdock Darner	*Aeshna mutata*	Special Concern

Vertebrates

Common Name	Scientific Name	Status
American Bittern	*Botaurus lentiginosus*	Endangered
Four-toed Salamander	*Hemidactylium scutatum*	Special Concern
Jefferson Salamander	*Ambystoma jeffersonianum*	Special Concern
Spotted Turtle	*Clemmys guttata*	Special Concern
Spring Salamander	*Gyrinophilus porphyriticus*	Special Concern
Wood Turtle	*Clemmys insculpta*	Special Concern

Core Habitat BM741

Vertebrates

Common Name	Scientific Name	Status
Jefferson Salamander	*Ambystoma jeffersonianum*	Special Concern

BioMap: Core Habitat Summaries

Williamsburg

Core Habitat BM651

Vertebrates

This Core Habitat contains hilly hardwood and mixed forests with scattered vernal pools that support populations of Jefferson Salamanders. It extends south from the southern portions of Conway State Forest in Williamsburg and Whately, and includes High Ridge, Dry Hill, Walnut Hill, and Carey Hill. It also includes over seven miles of brooks that likely support populations of Spring Salamanders. This is a largely roadless area, most of which is currently unprotected.

Core Habitat BM692

Natural Communities

This Core Habitat contains a beautiful, narrow corridor of Circumneutral Rock Outcrops and Talus Forests on the sloping shores of Wright Brook. Circumneutral Rock Outcrops are open communities of grasses, sedges and herbaceous plants occurring on rocky outcrops with exposed circumneutral (neither acidic nor calcareous) bedrock. Circumneutral Talus Forest communities develop on boulder strewn slopes below certain cliffs, with scattered trees, shrubs, vines, and ferns. There is often a gradient of vegetation density as the slope changes, with more trees on the lower slope. Here the picturesque rocky forest is free of disturbances and embedded within over 2000 acres of naturally forested land.

Core Habitat BM695

Natural Communities

This Core Habitat contains a continuation of the beautiful Circumneutral Rock Cliffs and Talus Forests occurring in a narrow corridor along Wright Brook. Circumneutral Rock Cliff communities consist of extremely sparse plants growing on small ledges and in crevices on a circumneutral cliff face. These communities tend to support a greater diversity of species than Acidic Rock Cliff communities. Circumneutral Talus Forest communities develop on boulder strewn slopes below certain cliffs, with scattered trees, shrubs, vines, and ferns. There is often a gradient of vegetation density as the slope changes, with more trees on the lower slope. Here the picturesque rocky forest is free of disturbances and embedded within over 2000 acres of naturally forested land.

Invertebrates

This Core Habitat includes Joe Wright Brook and several other nearby streams along which meadows and wetlands with Elderberry provide habitat for the Elderberry Longhorned Beetle. This Core Habitat is located in a relatively undeveloped and unfragmented landscape, and within close enough proximity to Core Habitats in Whately and Westhampton to allow for occasional dispersal of Elderberry Longhorned Beetles between these areas, which may be important for long-term persistence of populations of this species. The majority of this Core Habitat is within the Graves Farm Massachusetts Audubon Society Sanctuary; conservation of remaining areas of unprotected land within this Core Habitat is desirable to increase the amount of contiguous protected habitat and to help ensure the long-term viability of rare species inhabiting the area.

Core Habitat BM696

Natural Communities

This Core Habitat is part of a series of high-quality Circumneutral Rock Outcrops that are free of exotic species and disturbances. Circumneutral Rock Outcrops are open communities of grasses, sedges and herbaceous plants occurring on rocky outcrops with exposed circumneutral (neither acidic nor calcareous) bedrock. Here these Rock Outcrops are embedded within over 2000 acres of naturally vegetated land.

Core Habitat BM737

This Core Habitat encompasses a variety of habitats along Roberts Meadow and Brewer Brooks that support rare invertebrates such as the Spatterdock Darner dragonfly, and several rare species of salamanders, reptiles, and birds. Small portions of this area are protected as conservation land.

Invertebrates

This Core Habitat includes Hanging Mountain Pond and nearby meadows and wetlands that provide habitat for both the Spatterdock Darner dragonfly and the Elderberry Longhorned Beetle. This Core Habitat is located close enough to Core Habitats in Williamsburg and Northampton, allowing occasional dispersal between these areas. While a portion of this Core Habitat is on municipal watershed land, the majority appears to be unprotected. Conservation of the remaining areas of unprotected land within this Core Habitat is desirable to increase the amount of contiguous protected habitat and to help ensure the long-term viability of rare species inhabiting the area.

Vertebrates

This Core Habitat comprises mixed forest, shrub swamps, and wet meadows along Roberts Meadow and Brewer Brooks. These connected riparian habitats support populations of Jefferson, Four-toed, and Spring Salamanders, as well as Spotted and Wood Turtles. Shallow freshwater marshes and wet meadows also provide habitat for the American Bittern, a rare species of marsh bird.

BioMap: Core Habitat Summaries

Williamsburg

Core Habitat BM741

Vertebrates

This Core Habitat comprises upland forest and vernal pools that support a population of Jefferson Salamanders. Although this is a relatively small area bordered by major highways and development, the multiple vernal pools that are present likely serve as breeding habitat.

Core Habitat LW018

Exemplary Habitats

Common Name	Scientific Name	Status
Invertebrate Habitat		----------

Core Habitat LW387

Exemplary Habitats

Common Name	Scientific Name	Status
Invertebrate Habitat		----------

Living Waters: Core Habitat Summaries

Williamsburg

Core Habitat LW018

The clear waters of this tributary to the East Branch of the Mill River flow swiftly over and around the stream's boulders and cobbles. The Core Habitat supports a diversity of aquatic invertebrates, including some of the more ecologically sensitive insects: mayflies, stoneflies, and caddisflies. Forested stream banks help maintain the high-quality habitat by shading the water to keep it cool, by providing a natural energy source to the stream ecosystem in the form of leaves and sticks, and by controlling the runoff of sediments, excess nutrients, and water.

Core Habitat LW387

The East Branch of the Mill River supports a community of the more ecologically sensitive aquatic insects: mayflies, stoneflies, and caddisflies. The presence of this invertebrate community indicates the stream habitats here are relatively free of the impacts of development. Vegetated stream banks along the Core Habitat and upstream help maintain the habitat quality, shading the water to keep it cool and controlling the runoff of sediments, excess nutrients, and water from nearby development and roads.

Help Save Endangered Wildlife!

Please contribute on your Massachusetts income tax form or directly to the

Natural Heritage &
Endangered Species Fund

To learn more about the Natural Heritage & Endangered Species Program and the Commonwealth's rare species, visit our web site at: www.nhesp.org.